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Docket No. 03-004/PES-0192

REMARKS / ARGUMENTS

Status of Claims

Claims 1-21 are pending in the application and stand rejected. Applicant has amended Claim 1, leaving Claims 1-21 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. § 102(b)

Claims 1-3, 9-13 and 16-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fuglevand et al. (U.S. Patent No. 6,387,556, hereinafter Fuglevand).

Applicant traverses these rejections for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, *in a single prior art reference.*" *Vardegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Regarding Claims 1-3 and 9-11

Applicant has amended Claim 1 to now recite, inter alia,

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"...wherein a first sensor of the plurality of sensors is arranged for providing an operating characteristic that is monitored by the first sensor and that is derivable from one or more of the other sensors, the one or more other sensors including a different type of sensor than the first sensor, thereby providing redundant system information for determining whether an operational adjustment of the power system module is desirable."

No new matter has been added by this amendment as antecedent support may be found in the specification as originally filed, such as at Paragraph [0038] for example.

Dependent claims inherit all of the limitations of the parent claim.

In alleging anticipation by Fuglevand, the Examiner references Figures 2, 4 and 5, and alleges that from Figures 2, 4 and 5, Fuglevand discloses each and every element of the claimed invention. Paper No. 03032005, page 2.

In respectful disagreement with the Examiner, Applicant finds Figures 2, 4 and 5 to be absent any disclosure of a first sensor of the plurality of sensors that is arranged for providing an operating characteristic that is monitored by the first sensor and that is derivable from one or more of the other sensors, the one or more other sensors including a different type of sensor than the first sensor, thereby providing redundant system information for determining whether an operational adjustment of the power system module is desirable, which is specifically claimed for in the instant invention.

Additional, Applicant finds column 4 line 36 through column 8 line 12 (discussing Figure 2), column 9 line 27 through column 10 line 41 (discussing Figure 4), and column 10 line 42 through column 11 line 20 (discussing Figure 5), to be absent any disclosure of a first sensor of the plurality of sensors that is arranged for providing an operating characteristic that is monitored by the first sensor and that is derivable from one or more of the other sensors, the one or more other sensors including a different type of sensor than the first sensor, thereby providing redundant system information for determining whether an operational adjustment of the power system module is desirable, and the Examiner has not stated with specificity where in Fuglevand such a disclosure may be found.

Accordingly, Applicant submits that Fuglevand does not disclose all of the

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claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

Furthermore, Claim 1 recites, inter alia,

"... receiving a plurality of sensor signals at a common data bus..."

In alleging anticipation by Fuglevand at page 2 of Paper 03032005, the Examiner's remarks are absent any indication of where in Fuglevand such a common data bus may be found.

In comparing Fuglevand with the instant invention, Applicant finds Fuglevand to disclose at Figure 5 *discrete data buses*, and *not a common data bus*, communicating between the various slaves 102, 104, 106, 108, 110, 112, 114, 116, 118 and 120, and the master controller 100.

Accordingly, Applicant submits that Fuglevand does not disclose all of the claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

Additionally, Claim 10 recites, inter alia,

"...reporting the stored data to an external system or user on demand."

In alleging anticipation by Fuglevand at page 2 of Paper 03032005, the Examiner's remarks are absent any indication of where in Fuglevand such a reporting scheme may be found.

Accordingly, Applicant submits that Fuglevand does not disclose all of the claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

Yet furthermore, Claim 11 recites, inter alia,

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"...processing at least a portion of the stored data to *synthesize a replacement signal or to command a degraded operational mode.*"

In alleging anticipation by Fuglevand at page 2 of Paper 03032005, the Examiner's remarks are absent any indication of where in Fuglevand such a synthesizing or commanding scheme may be found.

Accordingly, Applicant submits that Fuglevand does not disclose all of the claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

Regarding Claims 12-13 and 16-17

Claim 12 recites, *inter alia*,

"...monitoring sensor signals *at a common data bus*, the common data bus in signal communication with a plurality of sensors, each sensor signal representative of an operating characteristic of the power system;

receiving and analyzing the sensor signals *to determine the existence of a malfunctioning device*, the malfunctioning device including a sensor, a processing element, an output device, or a control device; and

***automatically reconfiguring other operational devices* controlled by the control system to accommodate for the malfunctioning device."**

Dependent claims inherit all of the limitations of the parent claim.

In alleging anticipation by Fuglevand, the Examiner references Figures 2, 4 and 5, and alleges that from Figures 2, 4 and 5, Fuglevand discloses each and every element of the claimed invention. Paper No. 03032005, page 2.

However, in alleging anticipation, the Examiner's remarks are absent any indication of where in Fuglevand each and every element of the claimed invention arranged as claimed may be found.

More specifically, the Examiner makes no reference of where Fuglevand discloses *a common data bus*, makes no reference of where Fuglevand discloses the receiving and

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analyzing of sensor signals *to determine the existence of a malfunction device*, and makes no reference of where Fuglevand discloses *automatically reconfiguring other operational devices* to accommodate for *the malfunctioning device*.

Accordingly, Applicant submits that Fuglevand does not disclose all of the claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

Additionally, Claim 17 recites, inter alia,

"...reporting the stored data to an external system or user on demand."

In alleging anticipation by Fuglevand at page 2 of Paper 03032005, the Examiner's remarks are absent any indication of where in Fuglevand such a reporting scheme may be found.

Accordingly, Applicant submits that Fuglevand does not disclose all of the claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

Regarding Claim 18

Claim 18 recites, inter alia,

"...in response to a reported abnormal operating condition, determining whether the sensor is unhealthy;

in response to the presence of an unhealthy sensor, determining whether the operating characteristic sensed by the unhealthy sensor is derivable from one or more other sensors in the power system, the one or more other sensors including a different type of sensor than the unhealthy sensor;

in response to the operating characteristic sensed by the unhealthy sensor not being derivable, determining whether an operational adjustment of the power system or a portion thereof is desirable; and

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in response to the existence of a desirable adjustment condition, automatically adjusting the operating condition of the power system or a portion thereof."

At page 3 of Paper 03032005, the Examiner acknowledges that Fuglevand *does not disclose* having the controller to receive and analyze the sensor signals *to determine the existence of an unhealthy sensor* signal and substitute a redundant sensor for operation of the power system. (Emphasis added).

Applicant agrees that Fuglevand is absent the disclosure of determining whether a sensor is unhealthy.

In view of the claimed invention being directed to the *determining of whether a sensor is unhealthy*, and the Examiner's acknowledgement that Fuglevand *does not disclose* such a limitation, Applicant respectfully submits that the Examiner therefore cannot properly use Fuglevand to reject the claimed invention on anticipation grounds.

Accordingly, Applicant submits that Fuglevand does not disclose all of the claimed elements, including their claimed attributes, arranged as in the claim, and respectfully submits that absent anticipatory disclosure in Fuglevand of each and every element of the claimed invention arranged as in the claim, Fuglevand simply cannot be anticipatory.

In view of the foregoing, Applicant submits that Fuglevand does not disclose each and every element of the claimed invention arranged as in the claim, and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(b) have been traversed, and requests that the Examiner reconsider and withdraw of these rejections.

Rejections Under 35 U.S.C. §103(a)

Claims 4-8, 14-15 and 19-21 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fuglevand in view of Gaubatz (U.S. Patent No. 5,586,156, hereinafter Gaubatz).

Applicant traverses this rejection for the following reasons.

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Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest each and every element of the instant invention. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Claim 4 recites, *inter alia*,

"... in response to a sensed abnormal operating condition, determining whether the sensor is unhealthy,

in response to the presence of an unhealthy sensor, determining whether the operating characteristic sensed by the unhealthy sensor is derivable from one or more other sensors in the power system..."

Claim 14 recites, *inter alia*,

"... receiving and analyzing the sensor signals to determine the existence of an unhealthy sensor signal; and

substituting a redundant sensor signal or a derived sensor signal for the unhealthy sensor signal."

Claim 19 recites, *inter alia*,

"... in response to the operating characteristic sensed by the unhealthy sensor being derivable but the derived operating characteristic being indicative of an abnormal operating condition, determining whether an operational adjustment of the power system or a portion thereof is desirable."

Dependent claims inherit all of the limitations of the respective parent claim and any intervening claim.

The Examiner acknowledges that Fuglevand does not disclose having the controller to receive and analyze the sensor signals to determine the existence of an unhealthy sensor signal and substitute a redundant sensor for operation of the power

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system, and looks to Gaubatz to cure this deficiency. Paper 03032005, page 3 (Emphasis added).

In respectful disagreement with the Examiner, Applicant submits that Gaubatz does not cure this deficiency, but teaches instead a reactor protection system (RPS) that *assumes that all sensors and their data are good* and not outside the failed sensor limits, that the RPS produces scram signals *based on good sensors*, and that a multiple sensor voting scheme is employed *under this assumption*. Column 2, lines 41-58.

In comparing Fuglevand and Gaubatz with the claimed invention, Applicant submits that the References are absent a teaching or suggestion of each and every element of the claimed invention and teach a substantially different invention.

Since Gaubatz teaches an RPS that *assumes that all sensors and their data are good*, it necessarily follows that Gaubatz cannot teach or suggest a system that determines the existence of *an unhealthy sensor*.

Accordingly Applicant submits that the References fail to teach or suggest each and every element of the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness.

Furthermore, Applicant has remarked above how Fuglevand fails to disclose each and every element of the claimed invention as discussed with reference to the rejection under 35 U.S.C. §102, and submits that Gaubatz fails to cure those deficiencies. Accordingly, by Gaubatz failing to cure the deficiencies of Fuglevand, and by Gaubatz failing to teach or suggest determining the existence of an unhealthy sensor, Applicant submits that the combination of Gaubatz and Fuglevand falls wholly short of a teaching or suggestion of each and every element of the claimed invention.

Yet furthermore, if Gaubatz were to be combined with Fuglevand as suggested by the Examiner, one skilled in the art may at best arrive at a fuel cell power system having a *discrete data bus* (Fuglevand, Figure 5) in combination with a sensor voting scheme that *assumes that all sensors and their data are good* (Gaubatz, column 2 lines 41-58), which is a substantially different invention from the claimed invention.

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In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the foregoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §102(b) and 35 U.S.C. §103(a) have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

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The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 06-1130.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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